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Gesture Use and its Role for Nativeness Judgements

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Abstract

Despite the fact that gestures are seen as part of language, they are usually not included in studies of ultimate attainment and native-likeness in a second language. The aim of the present study is twofold: to give a description of the variation in gesture frequency, type and placement among different proficiency groups of Dutch learners of English, and to investigate the role that gestures play for determining nativeness of such learners. We compared gestures made by native and Dutch speakers of British English (BrE) and examined whether, and to what extent, native speakers of English use such gestures to judge nativeness. No clear differences were found between types, amounts and placements of gestures between the groups. Nor did the nativeness ratings of the three informant groups differ significantly. These results indicate that in contexts with two typologically and culturally similar languages gestures do not contribute to the perception of nativeness.

1. Introduction

Whenever speech production takes place, it is usually accompanied by movement of the speaker. This movement occurs largely subconsciously yet attributes to the message the speaker is trying to convey (McNeill, 1992; 2005). The movement can be highly dependent on culture (e.g., Archer, 1997) and might give away whether a speaker belongs to a certain speech community. In the field of gesture studies there is a growing body of work focusing on cultural and linguistic differences in the gesture use between speakers of different languages, with the majority focusing on relatively standardized gestures called emblems (e.g. Hauge, 2000; Jungheim, 1991; Mohan & Helmer, 1988). In addition, other studies have looked at speech-accompanying gestures (gesticulation) often focusing on the specific part of

gesticulation that co-occurs with the expression of motion events (e.g. Kellerman & Van Hoof, 2003; Özyürek, 2002; Stam, 1998). Just as with gesture production, the perception of possible cultural differences in gestures occurs mainly subconsciously. Gesture production and perception are generally not taught in language classes and are therefore abilities implicitly acquired rather than explicitly learned (Archer, 1997). Despite the apparent subconscious perception of gestures, Sapir (1949 as cited in Archer, 1997, p. 95) argues that we still “respond to gestures with an extreme alertness and, one might almost say, in accordance with an elaborate and secret code that is written nowhere, known by none, and understood by all”. A more recent study by Alferink (2008) revealed that it appears to be possible for people to distinguish cultures solely based on a speaker’s gesture use as a whole. In her study 15 monolingual speakers of Dutch, German, French, British English, and American English were videotaped while narrating a story. 10 monolingual speakers of each language were subsequently asked to judge which language was being spoken when watching only video material without sound. Rather than focusing on the gestures accompanying one aspect of language she looked at the intuitive responses to gesture use as a whole. Her results showed that her participants were significantly able to identify the language used correctly, and that it was easier to recognize one’s own native language than a foreign language. However, Alferink (2008) did not consider the identification of L2-learners, or nativeness, on the basis of gesture use. The current study builds on the findings by Alferink (2008) and investigates, firstly, to which extent native and non-native speakers differ in their gesture production rates, gesture types and gesture placements and, secondly, whether it is possible to determine nativeness solely

based on gestures in a perception task. We test this on a language pair within the same language family, British English (BrE) in the UK and Dutch in the Netherlands, whose speech communities are relatively similar culturally speaking (cf. Hofstede 1984:85 where Great Britain and Netherlands rank alongside another in two of four measures of culture: expressions of individualism versus collectivism, as well as in expressions concerning power distance).

2. Gestures

2.1 Gesture definition and categorization

Despite the fact that gestures have been a popular topic of research for centuries (see Kendon, 2004 for an overview) there is still disagreement between scholars regarding a clear definition of what gestures are. While certain scholars define gestures as including all movement (Beattie & Shovelton, 2004), others only include fixed gestures that have become standardized into their definition (Archer, 1997). In this article, gestures are defined as the “movement of hand and arms that we see when people talk” (McNeill, 1992, p. 1). Through the years, different criteria have been used to classify gestures (see Kendon, 2004). The classification used in contemporary research, however, is based on Kendon (1988) who distinguishes four different kinds of gestures placed along a continuum (McNeill, 1992). The first category on this continuum is ‘gesticulations’, which refers to gestures with meanings related to the accompanying speech and which, for this reason, are usually not interpretable without speech. The second category is pantomime, which may occur simultaneously with speech according to some (Yoshioka, 2005), but is usually defined as “a gesture or sequence of gestures conveying a narrative line, with a story to tell, produced without speech” (McNeill, 2005, p. 5). Following on the

continuum are emblems, which are signs that have a fixed meaning and whose slight alteration will change, if not delete, the meaning (McNeill, 1992). The final category consists of sign languages. The focus of this article is the first part of the continuum: gesticulations.

2.2 Cross-cultural and cross-linguistic gesture differences

The first large-scale research on gestures was conducted by Efron (1941) who showed that gestures are not determined by racial or biological factors, but rather by cultural factors. He compared the gestures of Jewish and Italian immigrants living in New York, of which half had just arrived in the US and were monolingual speakers of their own language. The other half was already assimilated to the American culture and was considered bilingual. In total he analyzed and compared the gestures of 850 'traditional' Jews, 700 'traditional' Italians, 600 'assimilated' Jews, and 400 'assimilated' Italians. Efron found significant differences between the 'traditional' Italians and Jews but also found that the assimilated Italians and Jews differed far less from one another, suggesting that gestures are mainly culturally determined, and hinting at the fact that gesture use might be different for bilinguals. Efron's study made way for further gesture research, and more studies have focused on differences in gestures between language cultures since, although none on such a large scale. Existing studies usually make a distinction between differences in gestures as a result of culture, and differences due to linguistic differences in the accompanying language.

Most research regarding gestures has focused on individual differences in gesture use and what they reveal about the cognitive style of different speakers (e.g., Kendon, 1997). Despite the fact that individual differences have a large effect on the

use of gestures during conversation (Alibali, 2005), there appear to be conventions regarding gesture use that are distinctive to specific cultures. This is clearly evident in the case of emblems, but also in gesticulation. According to Gullberg (2010) “individual gesture production is realized within the boundaries of culturally and linguistically determined repertoires” (p.78). This is due to the interconnectedness of gestures and speech since both are part of the ‘expressive strategy’ of the interlocutors, and, therefore, influenced by “cultural values and historical tradition” (Kendon, 1997, p. 117). Of all gesticulation types deictic gestures - used to draw attention to objects around us - reveal the most straightforward cultural differences. While the prototypical way of pointing in Western Europe is with an extended index finger, there are cultures in which different parts of the body or hand are used. Apart from in the form of gestures, cultural differences can also be found in gesture frequency and the viewpoint of gestures. So (2010) showed that there is a difference between American English speakers and Chinese speakers regarding gesture frequency, with the Americans producing more gestures, both representational (iconic and abstract deictic gestures) and nonrepresentational (beats, emblems, and concrete deictic gestures) than the Chinese. Furthermore, she also analyzed the gesture use of Chinese-English bilinguals and found a transfer of representational gesture use from L2 English to L1 Chinese, suggesting a “closely intertwined relationship of representational gestures and accompanying speech” (So, p. 1335). Regarding viewpoint, McNeill (1992) distinguishes two manifestations in gesture use: Character Viewpoint (C-VPT) and Observer viewpoint (O-VPT). The use of viewpoint is culturally determined. For example, Japanese speakers tend to mainly use C-VPT while English speakers prefer the O-VPT (Brown, 2008). Brown found

that for Japanese speakers of English, the preference of viewpoint is transferred from the L2 to the first language (L1), for they “patterned more like the monolingual English speakers than their monolingual Japanese counterparts” (Brown, 2008, p. 256).

In addition to cultural differences a growing body of work is revealing that linguistic differences between languages can also lead to differences in gestures, due to the “semantic and temporal coordination between speech and gesture” (Gullberg, 2008, p. 282). As a result, speakers from typologically different languages tend to gesture differently (Özyürek, Kita, Allen & Brown, 2005). A distinction can be made between the influence of differences regarding syntactic structure and semantic differences, with the latter influencing the form of gestures and the former mostly influencing the timing.

Differences in the syntactic organization of semantic information can for example be found in the expression of voluntary motion and placement. Talmy (1985) classified languages into two broad types, depending on the lexical packaging of path information. In ‘satellite-framed’ languages (such as English) “path is encoded outside the verb, in a so-called satellite (or verb particle), or in a preposition” (McNeill, 2000a, p. 45–46), while the manner is encoded in the verb. In contrast, in ‘verb-framed’ languages path is encoded in the verb, and manner is encoded as an adjunct outside of the verb, either as an adverbial gerund in Romance languages such as Spanish (Slobin, 1996) or as the verb in a subordinate clause in other ‘verb-framed’ languages such as Turkish and Japanese (Kita & Özyürek, 2003). The differentiation of these two types of languages is also present in the accompanying gestures; Kita and Özyürek found that whereas motion and path are

packaged into one clause and one accompanying gesture in English, Turkish and Japanese speakers express motion and path in two separate clauses, leading to two separate accompanying gestures.

Differences in semantic coordination can be found with regards to the difference of placement verbs and expression of motion events between languages. Three types of languages can be distinguished regarding placement verb inventories: languages with one single placement verb (e.g. French: *mettre* 'put'), languages which have small sets of obligatory verbs that are usually based on posture (e.g. Dutch: *leggen/zetten* 'lay'/'set' or Swedish: *sätta/ställa/lägga* 'set'/'stand'/'lay') and, lastly, languages that have a large set of classificatory verbs (e.g. Tzeltal verb roots *xij-* 'place sticklike things regardless of orientation', Brown, 2006) (Gullberg, 2009). Gullberg (2011) found that the distinction between French and Dutch for placement verbs was also present in the gestures of native speakers: where the French solely gesture the direction of the movement, the Dutch also gesture "about figure objects along with the movement, seen as object-incorporating hand shapes" (p. 184).

Furthermore, semantic differences can also be found in the expressions of motion events. Kita and Özyürek (2003) compared native speakers of English, Turkish, and Japanese, and found a difference between English and the other two languages when the participants had to describe a scene in which the protagonist swung from one building to another. In Turkish and Japanese there is no "readily accessible expression that semantically encodes agentive change of locations of the protagonist with an arc trajectory" (Özyürek et al., 2005, p. 222) while in English there is (i.e. *swing*). This led to a difference in gestures, for while the English

participants reflected the arc trajectory in their gestures the Turkish and Japanese participants did not: they mainly gestured in a straight manner.

Another example of the influence of structural organization is the difference in topical focus between languages, for multiple studies have shown that gestures tend to accompany information that is either new or the point of focus (Levy & McNeill, 1992; McNeill, 2000b; McNeill, Levy & Cassell, 1993). For example, Yoshioka and Kellerman (2006) found that, in their gestures, Japanese speakers focus on referents' setting and location in their narratives, while Dutch speakers focused on their actions.

So far, studies conducted on gestures and studies regarding spoken second language acquisition (SLA) have mostly occurred side by side without crossing paths (but see Taub, Galvan, Piñar and Mather (2008) for empirical evidence of transfer of pre-existing gesture shapes and locations to signs in L2 learners of American Sign Language). Whereas SLA studies have focused solely on spoken and written language without mentioning gestures, gesture studies have mostly looked at cultural and linguistic differences between the gestures of speakers of different languages. Gullberg (2006) has drawn attention to the importance of including gesture in SLA studies and provides two main arguments for doing so. Firstly, because gestures should be treated as an aspect of the target language that can be acquired and, secondly, because gestures can provide insight into L2 acquisition processes such as "handling of expressive difficulties, the influence of the first language, interlanguage phenomena, and possibly even into planning and processing difficulties" (p. 103).

2.3 Research questions

The present study aims to fill the above-mentioned gap in the gesture literature by focusing on gesture use in relation to ultimate attainment. In order to investigate this, we first address the question of whether there are differences between gestures of Dutch near-native speakers of English and English native speakers regarding amount, types, and placement of gestures (RQ1). Furthermore, the role of gestures in judging nativeness has been divided into two separate research questions: whether it is possible for native speakers of BrE to judge the nativeness of Dutch and English speakers of BrE based solely on gestures (RQ2), and to what extent native speakers of BrE use gestures as opposed to spoken language to judge the nativeness of both Dutch and English speakers of English (RQ3).

Regarding the production of gestures, we hypothesize that the differences between the L2 and L1 speakers of English will be few. The languages belong to the same branch of the same language family (West-Germanic) and while there are intra-typological differences (cf. Kellerman & Van Hoof, 2003; Van Hoof, 2000) previous studies indicate that gesture patterns have similarities: both languages focus on referents' actions and represent these in their gestures, "aligning [them] with verbal elements" (Gullberg, 2008, p. 282). Both languages are "satellite-framed" languages, suggesting that the Dutch and the English speakers will use mostly singular gestures to indicate path and manner. However, the two languages do differ in placement verbs, which is represented in the gestures, as English speakers only gesture the path of the movement, while Dutch speakers' gestures will also incorporate the object (Hoetjes, 2008). While the previous studies mentioned here give us an insight into the differences in gesture use between English and Dutch it should be noted that there are altogether few studies that consider variation in

gesture use between different national speech communities. An exploratory study such as this can thus still discover previously undetected differences in frequency and manner of gestures.

As for the perception side of our study we hypothesize that rate and manner variations in gestures between groups are noticeable and hence play a role in the perception of nativeness. Alferink (2008) indicates that language recognition is possible on the basis of gesture usage only and we thus hypothesize that it is also possible for native speakers to tell apart the near-native Dutch speakers of English from the native speakers, based on gestures alone.

3. Methodology

3.1 Participants in the production task

For both the descriptive part of the study and stimuli-collection for the perception task we video-recorded 15 participants divided into three groups of 5 participants: (1) native speakers of BrE, (2) Dutch near-native speakers of BrE, and (3) a control group of Dutch speakers of English. All participants were male and between 19 and 41 years of age. All the participants studied at the University of Groningen and all participants lived in the Netherlands at the time of recording.

In group 1 three of the five participants had lived in the Netherlands for less than a year. One of the participants indicated to have been living in the Netherlands for 2,5 years and one for 6 years. Since these participants had not (yet) started to learn Dutch and have indicated to consider themselves monolingual native speakers of British English, they are included despite the relatively longer length of residency in The Netherlands. Participants placed in group 2 were selected based on their high level of English proficiency and the fact that their BrE accent was near-native: all

participants in this group were rated to approximate C2 level on the CEFR scale (Council of Europe, 2001) and their accents were hardly indistinguishable from English native speakers¹. It should be mentioned, however, that these participants were all considered late learners of English as they started learning the language at the age of 11 (final year of primary school). Lastly, a control group of Dutch speakers of English was included. These participants' proficiency levels ranging from B2 to C1, the standard CEFR level after graduating from Dutch VWO or grammar school (Van Hest, De Jong & Stoks, 2001). All of these participants spoke with a noticeable Dutch accent. One participant's accent sounded closer to an American accent to the researchers due to a bunched approximant realization of the post-vocalic /r/ but since the accent is clearly non-native, the participant was still included.

3.2 The production task: elicitation and analysis

The participants were asked to watch and consequently retell the Tweety and Sylvester cartoon *Canary Row* (Warner Brothers), a cartoon often used for eliciting gesture in the retelling due to the physicality of the actions Sylvester undertakes (McNeill, 1992). The retellings were filmed and, throughout all recordings, the same interlocutor was present to serve as an auditor to whom the participants were asked to retell the story. The auditor introduced herself to the participants in English but was instructed not to speak during the rest of test. Her presence only served to reduce the influence of the camera as much as possible. A PowerPoint with screenshots of the cartoon was used to help the participants remember the sequence. Participants were given a black t-shirt to wear to make sure that style of

¹ This judgment was made by English language proficiency teachers at the University of Groningen

clothing did not interfere with subsequent nativeness ratings in the perception experiment. Both the experimenter and the auditor were highly proficient L2 English speakers, with Dutch and Greek as native languages respectively, and all interaction and instructions were in English.

For the analysis of the gesture use of the participants in this study, the coding scheme of McNeill and Levi (1982) is used, which is “gauged to identify types of gesture that appear in narratives” (McNeill, 1992, p. 75). Three main aspects are focused on: the amount of gestures used, the use of different types of gestures, and the placement of the gestures. First, all visible movement is identified as either gestures or non-gestures, with the latter consisting of self-touching and object manipulation (McNeill, 1992). For each participant the amount of used gesticulation in total is counted. Since there was a wide variety in length of narratives the number of gesticulation is corrected by dividing the total number by the length of the narrative; from the moment the participant started talking until the final utterance ended.

Furthermore, a distinction can be made between different types of gesticulation: beats, deictic gestures, metaphoric gestures, iconic gestures, and Butterworths. Beats refer to rhythmic movements made to accentuate a certain word that holds importance. They are usually short and sharp movements whose forms are independent of the actual content. Deictic gestures refer to all pointing gestures made during speech. Pointing can be used to refer to concrete entities, however, most pointing occurring in adult speech consists of abstract deictic gestures (McNeill, 1992) referring to abstract notions. The abstract form of pointing is also part of the category of metaphorical gestures, which refer to gestures that

represent abstract images. Rather than using gestures to visualize or elaborate on an absent object that is being talked about, this type of gesture represents an abstract concept, like an idea or a memory (McNeill, 2005). For this study abstract deictic gestures were counted as members of the metaphoric gestures category. The fourth category that can be distinguished is iconic gestures, which are gestures whose forms represent concrete concepts. An iconic gesture embodies characteristics of the object or movement it represents, with context still being required to make sense of the gesture; the same gesture can be representative of different concepts. Finally, Butterworths are gestures typically used when the speaker is searching for a word or lexical expression (Butterworth & Beattie, 1978). All gestures are divided into one of these five categories and the percentages of each type for each participant is calculated.

Lastly, place of movement is analyzed; whether the participants gesture mainly in front of their body or whether they spread out. In case of differences between the three groups, one-way ANOVA's were used to see whether the differences were significant.

3.3 Participants for the perception task

For the gesture perception task, a total of 54 people participated in the online survey, 30 females and 23 males (one candidate refrained from filling in their sex). The age ranges from 20 to 75, and the level of education from having finished high school to PhD graduate. Of the 47 that were in or completed university, 25 had taken linguistic courses. All informants were native speakers of English and living in an English speaking country: the UK ($n = 31$), the United States of America ($n = 17$), South Africa ($n = 3$), Australia ($n = 2$), and Canada ($n = 2$).

3.4 The perception task

For the gesture perception task video fragments of 10 seconds are selected from each individual in the production task. Since the recordings were unscripted each participant gestured differently and, therefore, different video fragments were selected for each participant to create a representative sample based on the frequency and amount of gestures used (see results in section 4.1). For each fragment three modalities were created: only audio, only video, and both audio and video. The videos were modified to black and white and the participants' heads were covered with a black oval shape in order to reduce the effect of skin color, appearance, and lip movement on the perception of the nativeness judges (see Figure 1). Next, these recording files were put into three online surveys with each survey only containing one of the modalities for each fragment to avoid repetition. Raters were asked to indicate whether they thought the speaker was a native speaker of British English (yes/no) and how sure they were of this judgment on a Likert scale (very sure – quite sure – unsure). The two questions in the survey were later converted into one 6-point Likert scale (1 = yes very sure, 2 = yes quite sure, 3 = yes unsure, 4 = no unsure, 5 = no quite sure, 6 = not very sure) for statistical purposes. There was also an option for each video fragment to add comments. In the instructions, however, it was explicitly stated that this was optional to stimulate raters to base their judgement on their initial impressions.



Figure 1: A screenshot from the edited recording of one of the participants

3.5 Statistical analyses of the perception measures

Due to the ordinal nature of the Likert-scale, the non-parametric test Kruskal-Wallis is used to see whether there were any significant differences between the judgments of the three groups. Finally, a repeated measures ANOVA is used to look at the average accuracy of the raters for the three different modalities (0 = nativeness assessed incorrectly and 1 = nativeness assessed correctly).

4. Results

4.1 Production task: Gesture description analysis

In general, the near-native group ($M = 20.88$) gestured more than the other two groups (native group: $M = 16.5$; control group: $M = 15.81$). The biggest amount of variation was found in the control group ($SD = 9.03$) which consisted of both the person who gestured most (Control 5 = 31.06 gestures per minute) and the person who gestured least (Control 3 = 6.59 gestures per minute). The native group was the most homogeneous with a standard deviation of 5.11 (near-native group: $SD = 6.62$).

This difference in amount of gestures is visualized in Figure 2. A one-way ANOVA revealed this difference between the groups not to be significant ($F < 1$).

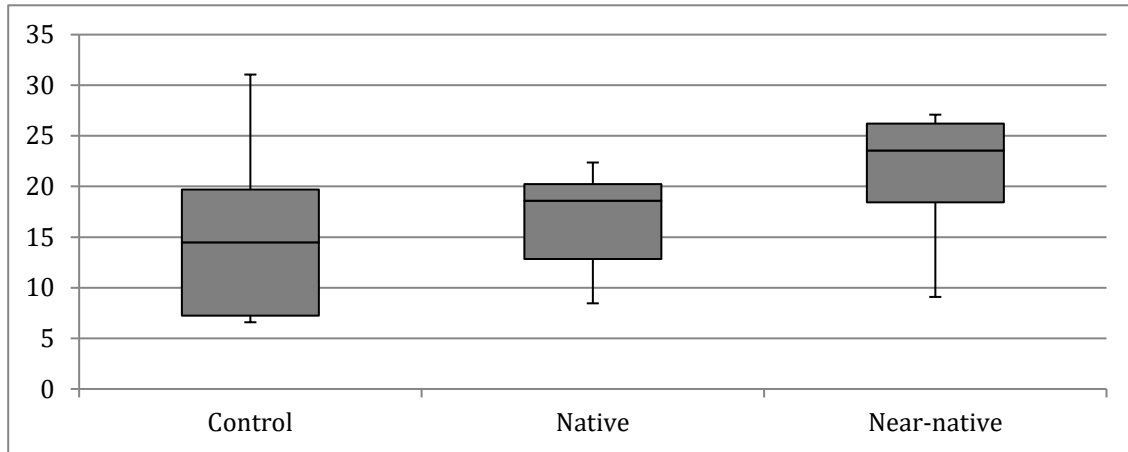


Figure 2: Boxplot of the number of gestures per minute for each group.

When comparing the types of gestures within and between groups the near-native group and control group used mostly beats, followed by iconic and metaphoric gestures. In the native group iconic gestures were used most often, then beats and metaphoric gestures. The percentages of how often different types of gestures were used by each group are visualized in Figure 3. From the charts it appears that the native group uses more iconic gestures compared to the other groups. Furthermore, the control group uses slightly more Butterworths, with 1.5% compared to 0.3% (near-native and native). However, a one-way ANOVA revealed both differences not to be significant (both $ps > .404$). Figure 3 additionally reveals that the near-native group appears to use relatively more beats when compared to the natives and controls. This difference also failed to reach significance ($F(2,12) = 2.73; p = .105$).

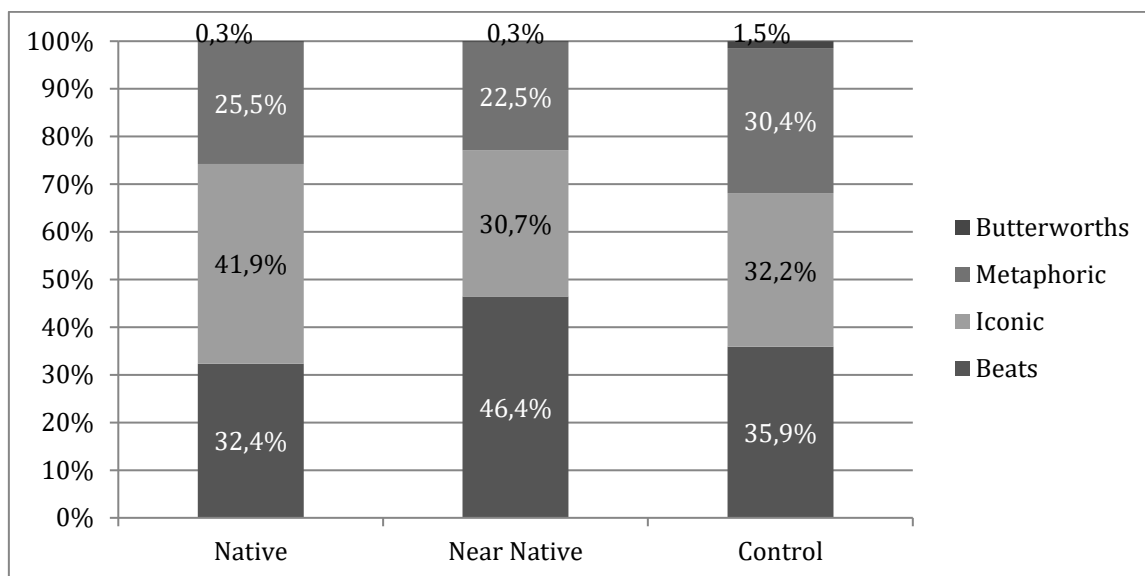


Figure 3: Percentages of different types of gestures used for each group.

Finally, with the exception of one participant (Native 4), who gestured an equal amount in front as well as beside his body, everyone gestured more in front of than beside their body. These results are visualized in Figure 4. In general, the near-native group gestured least beside the body (23.3%) and the native group most (31.5%). However, a one-way ANOVA showed that this difference was not significant ($F < 1$).

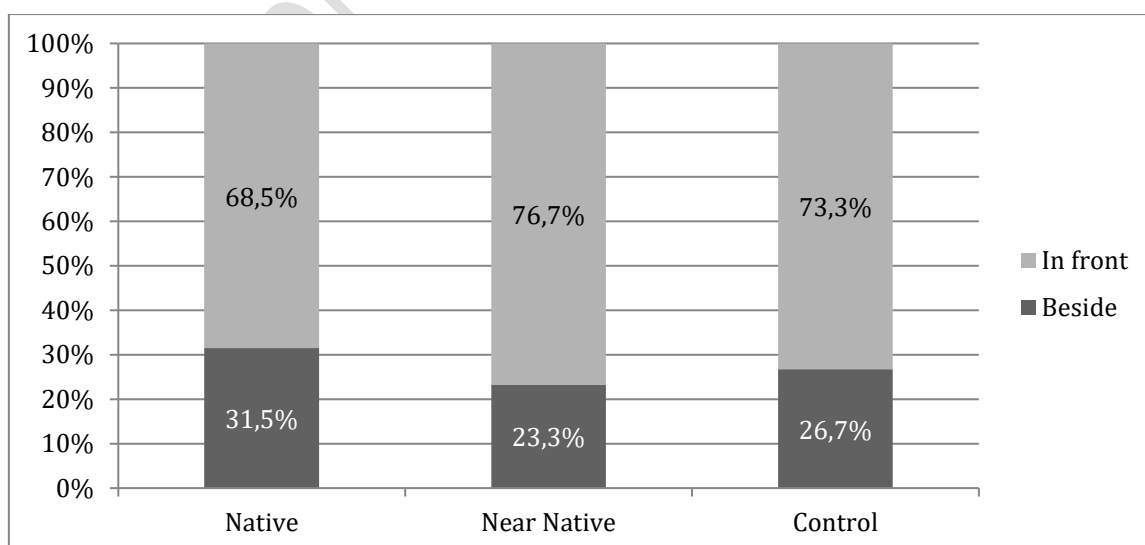


Figure 4: Percentages of gestures in front and beside the body for each group.

4.2 Results from the perception task

In general, the native group ($n = 97$) was judged least native-like with a mean rating of 3.74 (out of 6 on the Likert scale), followed by the near native group ($N = 90$, Mean = 3.52) and the control group (mean = 3.47). Nevertheless, the non-parametric Kruskal-Wallis H test revealed these differences to be non-significant, $\chi^2(2) = 2.809$, $p = 0.245$ with a mean rank score of 130.6 for the control group, 135.3 for the near-native group, and 148.9 for the native groups (see Figure 5). In other words, despite a trend towards more people being judged native in the control group as compared to the near-native and native group, this difference was not significant.

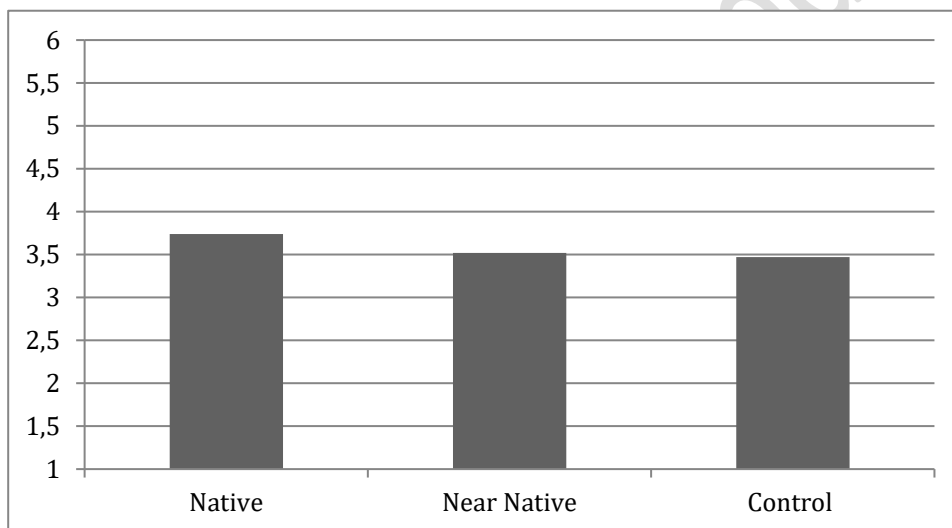


Figure 5: Bar chart of the mean scores of each group (1-3 = yes, 4-6 = no)

A one way repeated measure analysis of variance (ANOVA) was conducted to evaluate the null hypothesis that there is no change in accuracy scores between the three modalities. The results of the ANOVA with a Greenhouse-Geisser correction indicated a significant effect of modality on accuracy scores ($F(1.156, 16.186) = 8.823$, $p < .01$). Follow up comparisons revealed that the video modality was judged accurately significantly less often ($M = 0.464$; $SD = 0.14$) compared to the audio

modality ($M = 0.737$; $SD = 0.323$) and the audio/video modality ($M = 0.743$; $SD = 0.273$), with $p < 0.05$ (see Figure 6). There was no significant difference between the audio and the audio/video modality ($F < 1$) indicating that these two modalities were judged similarly.

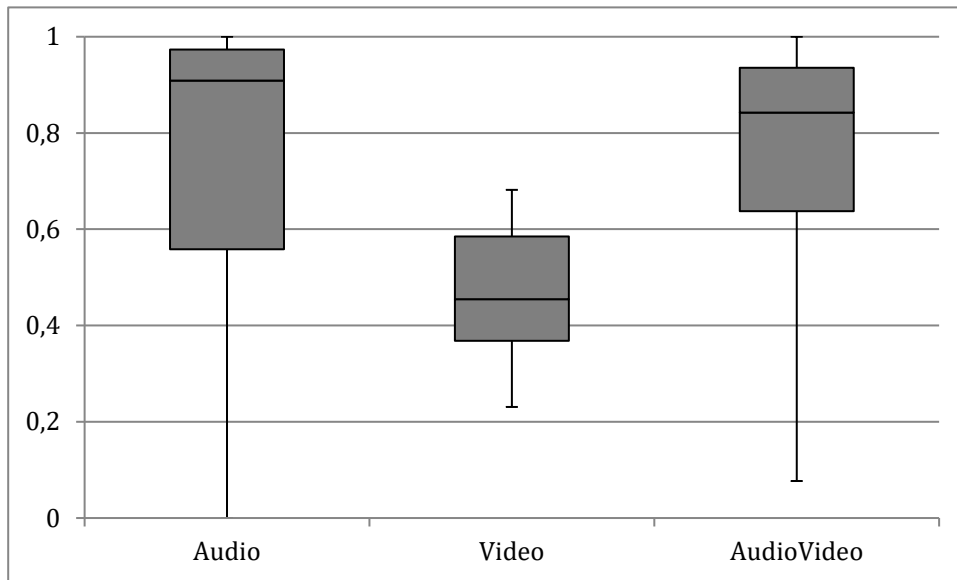


Figure 6: Boxplot of the accuracy scores for each modality.

5. Discussion

5.1 Gesture Production

There were not many obvious differences between the gesture production of the Dutch and the English participants. The large amount of intra-group variation regarding amount, types, and placement of gestures made it difficult, if not impossible, to draw any conclusions regarding the production aspect of our study. In the group of British English speakers two of the informants had lived in the Netherlands for a longer period of time (2 and 6 years). While they do not speak Dutch, it could of course be the case that they will still have acquired a different gesture production pattern during this time in the Netherlands. However, on the basis of their data alongside the other production data we still think we may suggest

that language background (English or Dutch) is not a reliable predictor of gesture use, a finding which could possibly be expected in a study of typologically similar languages. A more in-depth analysis including form of gestures and a larger group of participants are required to further back up this assumption. It should also be taken into account that all participants, including the Dutch control group, were speaking in English when they were recorded. Considering the fact that the studies on gestures accompanying motion events² reveal L1 transfer into the L2 (e.g. Kellerman & Van Hoof, 2003; Özyürek, 2002; Stam, 1998), it could be the case that, also following So's (2010) suggestion of a close relation between representational gestures and the directly accompanying speech, more general linguistic differences in gesture use (such as e.g., frequency of gestures) are dependent on the native language spoken. More qualitative research into the nature of these potential differences is again needed to support such claims by, for example, comparing the overall gesture use in bilinguals' L1s to the gesture use in their L2s, or by replicating this experiment with two languages that are typologically less similar.

A factor that could seem to influence gesture production in our data is the sexual orientation of the speaker. Despite the fact that sex was controlled for in the study, sexual orientation of the speakers was not. Three of the four participants who gestured the most self-identify as homosexual (two in the near-native group and one in the control group). In general, they manifest the most movement of all the speakers even though not all were classified as gestures. It is, however, difficult to

² In the narratives in this study there was no instance in which the verb 'put' was used, so no further or counter evidence to the results of the former studies could be made.

make assumptions regarding the effect of sexual orientation for gesture use. Although many people might think they are able to recognize homosexuals based on nonverbal behavior, sometimes referred to as a *gaydar*, these assumptions seem to “rely primarily on stereotypic attributes” (Cox, Devine, Bischmann, & Hyde, 2015, p. 1). In addition, studies that have investigated people’s ability to recognize sexual orientation have focused on facial structure (Cox, et al., 2015; Rule & Ambady, 2008) rather than on gestures. We did not find a separate ‘gay’ way of gesturing and, to our knowledge, no empirical studies have yet been conducted regarding the gesture use of homosexuals and whether this use differs from heterosexual speakers. In *The Encyclopedia of Homosexuality*, there is a brief entry regarding gestures and body language which mentions the lack of research on this topic. There are stereotypical gestures denoting homosexuality, which are often used as a deprecatory gesture among heterosexuals to signal a homosexual (Dynes, 1990). One such stereotypical form of a gay gesture in males is the *limp wrist* which refers to the state where the wrist falls in a 90-degree angle from the forearm, often occurring during speech and exhibited by all the three cases mentioned before. However, one should be very careful with making assumptions based on stereotypes for even in this study where there was only a small group of participants a lot of variation in the number and types of gestures could be found inter-individually. Some homosexual participants did not portray any of the stereotypical gestures. Dynes does refer to a ‘gay-culture’ which would suggest that, like any other culture, it would come with its own, culture-specific, gestures. More empirical studies are needed to investigate this possibility and to explore the indexing of gender and sexuality in non-verbal behavior.

5.2 Gesture Perception

With no clear differences between the gesture use of the three groups the result that there are no significant differences between the ratings of the three groups by viewers is not surprising. We hypothesized that, due to Sapir's (1949 in Archer, 1997) notion of the extreme alertness with which people handle gestures, native speakers would, probably subconsciously, be influenced by even very small differences between the gesture use of the three groups. This could enable them, we hypothesized, to recognize the native speakers based solely on their gestures. Contrary to this expectation the results reveal that people are not able to determine nativeness merely on the basis of gestures (RQ2). Furthermore, the fact that there was no significant difference between the accuracy scores of the audio and audio-visual modality suggests that gestures do not contribute to the perception of nativeness at all (RQ3). However, there are some aspects that need to be considered when reviewing these results.

The comment section available for every video clip revealed that the raters did not always base their answers solely on the gestures but were also largely influenced by other non-verbal cues, such as perceived overall relaxedness/nervousness, certainty of movement, and posture. One of the raters based his assumption on the fact that a participant was wearing a ring on the ring finger of the right hand, while wedding rings in the UK are worn on the left hand. Although nervousness is often enhanced by having to speak in an L2, especially when the L2 is not fully attained, there were other factors during this experiment that influenced nervousness as well: the presence of the video camera and unfamiliarity with the researcher and interlocutor. Some of the participants were

obviously more nervous to be recorded and perform well than others. This could account for the relatively low nativeness ratings of the native English speakers received in our perception study. The influence of personal characteristics such as nervousness are difficult to control as they only become obvious once the recording equipment has been switched on. It should also be noted here that two of the participants were personal friends of the researcher with one also being familiar with the interlocutor and consequently less nervous. One of those (Control 2) ended up being judged native most often. When it came to the certainty of the gestures some judges were mentioning the lack or presence of confidence in the manner of gesturing as their main reason of deciding on the nativeness of the speaker. However, these observations are based on a relatively small sample as most of the raters did not fill in the comment section. Therefore, for the other raters it cannot be assumed that the judgment was based on the same observations.

Another aspect that should be considered is the fact that the raters had no idea what was being said in the video fragments and, therefore, had no context in which they could interpret the gestures. One of the raters did indeed comment that it was *very difficult to speculate when you don't know the context of what they're talking about*. Furthermore, because the faces were invisible there were also no clues from the lips to see in which language the participants were talking. One of the raters that stopped after the first video clip indicated that the reason he stopped was that *it is hard to tell. Even with no sound it would be easier to have a guess at whether the person was a native English speaker if their face was visible. This person could be talking any language*. However, by showing the face another major influence on the answers of the raters would be added, especially when the movements of the face

are not included in the notion of gestures. Moreover, revealing the face would allow stereotypical assumptions regarding the appearance of a native speaker to influence the ratings. Nevertheless, this is an important dilemma and should be considered thoroughly when doing further research regarding gesture recognition; although Alferink (2008) found significant results despite the lack of context, gestures in isolation appear to not be enough to judge nativeness. More information could be added for the raters by for example showing the video clips with subtitles, which will provide the raters with the missing context, and allow them to judge the gestures in relation to the accompanying speech, without revealing the faces or pronunciation.

6. Conclusion

In this article we have shown that there are no clear differences between the gesture use of British English and Dutch speakers' retelling of a short video in English. This could be explained by the similarities between the accompanying cultures and the linguistic features of Dutch and English. However, more data, especially from the Dutch speakers performing in their L1, and more in-depth analyses are needed to further support this finding. We have indicated that when it comes to gesture use in speech communities with typological similar languages, individual differences play a bigger role than cultural or linguistic differences. Gestures alone, without context and further information, are not enough to distinguish native speakers from non-native speakers. For further research it would be necessary to provide the raters with context by e.g. providing them with more information or even subtitles of the accompanying spoken language. However, a slight alteration of the research question, looking at two languages that are culturally and linguistically different,

also provides an interesting topic for further research into the non-verbal cues that influence our perception of speakers and speech events.

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